

REMARKS

Claims 1, 3-12, 17, 18 and 20 are pending in this application. By this Amendment, Applicants amend claims 1 and 12, and cancels claims 2 and 13.

Table 1 on page 15 has been amended to include --Ω-- to the "DC resistance" column values in the table. This symbol was inadvertently omitted from Table 1, as originally filed. No new matter has been added.

Claims 1, 3-8, 12-13, 17 and 20 were rejected under 35 U.S.C. 103(a) as being unpatentable over JP 8-306570 ('570) in view of JP 63-79306 ('306). And claims 2, 9-11 and 18 were rejected under 35 U.S.C. § 103(a) as being unpatentable over JP 8-306570 in view of JP 63-79306, and further in view of Maruyama (U.S. 6,121,866). Applicants respectfully traverse this rejection.

Claim 1 has been amended to recite:

"a block made of at least either resin or rubber having a magnetic material dispersed therein, external electrodes being provided on said block; and

a plurality of coils buried in said block, end portions of each of the plurality of coils being electrically connected to said external electrodes; wherein

each of the plurality of coils has different electrical characteristics." (Emphasis added)

The Examiner acknowledges that neither JP '570 nor JP '306 teaches or suggests a plurality of coils, each of which has different electrical characteristics. However, the Examiner maintains that Maruyama teaches "a plurality of coils [10], each having different electrical characteristics." The Examiner concluded that "it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the coil design of Maruyama in the inductor of JP '570, as modified, for the purpose of controlling the noise and current capacity of the inductor."

The Examiner alleges that col. 6, lines 12-16 of Maruyama teaches coils having different electrical characteristics. However, this portion of the specification of

Maruyama refers to the fact that various types of coils 10 having various characteristics can fit within the same package tape 5 for shipping the coils, thereby eliminating the need to design and manufacture a special tape package for each different type of coil 10. These "characteristics" referred to in col. 6, lines 12-16 of Maruyama are actually physical characteristics, namely size and shape, and are not electrical characteristics, as coils 10 having the same shape and size but different electrical characteristics would not require different package tapes.

Furthermore, this portion of Maruyama only relates to physically different coils provided in a carrier or package tape for shipping purposes. The coils of Maruyama are not embedded in a block, nor is there any suggestion whatsoever that the coils of Maruyama are to be embedded in a block. In fact, Maruyama teaches that each individual coil 10 is to be separately mounted on a substrate in a surface mounting manner, thus clearly teaching away from mounting even one of the coils 10 in the block. Even if one of the coils 10 of Maruyama were to be embedded in a block, the single coil 10 would have uniform electrical characteristics. There is no teaching or suggestion in Maruyama of mounting a plurality of coils in a block, and certainly no teaching or suggestion of mounting a plurality of coils having different electrical characteristics in a block.

Accordingly, Applicant respectfully submit that JP '570, JP '306 and Maruyama, taken individually or in combination, fail to teach or suggest the invention recited in claim 1.

Claim 12 recites:

"a block made of at least either resin or rubber having a magnetic material dispersed therein; and

at least one spirally-wound parallel wire line buried in said block and including a plurality of electromagnetically close-coupled coils, the plurality of electromagnetically close-coupled coils being wound around a single coil axis and defined by insulation-coated conductors." (Emphasis added)

Applicant's claimed invention recited in Claim 12 recites the embodiment shown in Figure 9 and described on page 11, first full paragraph, of the originally filed application. As is seen in Figure 9, the spirally-wound parallel wire line 94 is buried in the block 2 and includes a plurality of electromagnetically close-coupled coils 91 and 92. The electromagnetically close-coupled coils 91 and 92 are wound around a single coil axis and are defined by insulation-coated conductors 91a and 92a.

In contrast, JP '570 discloses four spirally wound coils that are arranged parallel relative to each other and are buried within a composite material forming a block. However, each of the four spirally wound coils is wound around a separate, independent coil axis as compared to the other of the four spirally wound coils. Thus, none of the coils of JP '570 could be closely coupled or wound around the same coil axis with another of the coils since JP '570 clearly teaches that each of the four coils should be separately wound around a unique coil axis and separated from the other coils.

JP '306 teaches only a single coil, and therefore fails to cure the deficiencies of JP '570.

In addition, the coils of both JP '570 and JP '306 are merely metallic coils which are not covered by any insulation as required by claim 12.

Accordingly, Applicants respectfully submit that JP '570 and JP '306, taken individually or in combination fail to teach or suggest the invention recited in claim 12.

In view of the foregoing Remarks, Applicants respectfully submit that this application is in condition for allowance. Favorable consideration and prompt allowance are respectfully solicited.

To the extent necessary, Applicant petitions the Commissioner for a One-month extension of time, extending to June 28, 2001, the period for response to the Office Action dated February 28, 2001.

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The Commissioner is authorized to charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. **50-1353**.

Respectfully submitted,


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VERSION WITH MARKINGS SHOWING CHANGES MADE

In the Specification:

Table 1

| | Breakdown voltage | Coupling coefficient | DC resistance |
|--------------------------|----------------------|-------------------------|---------------|
| Preferred Embodiment | 100 V | 99 % | 10 m Ω |
| Comparative Example 1 | 50 V | 80 % | 1 Ω |
| Comparative Example 2 | 16 V | 95 % | 1 Ω |

In the Claims:

1. A composite inductor element comprising:
a block made of at least either resin or rubber having a magnetic material dispersed therein, external electrodes being provided on said block; and
a plurality of coils buried in said block, end portions of each of the plurality of coils being electrically connected to said external electrodes; wherein
each of the plurality of coils has different electrical characteristics.

12. A composite inductor element comprising:
a block made of at least either resin or rubber having a magnetic material dispersed therein; and
[a plurality of] at least one spirally-wound parallel wire line buried in said block and including a plurality of electromagnetically close-coupled coils, [buried in said block, said coils being arranged in parallel and being constructed of

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spirally-wound parallel-wire lines made of a plurality of] the plurality of electromagnetically close-coupled coils being wound around a single coil axis and defined by insulation-coated conductors.